

P A P E R
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C H E M I S T R Y.



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C H E M I S T R Y.

To obtain pure and unadulterated those Drugs that are of peculiar efficacy in Medicine, is universally allowed to be an object highly deserving public attention: the Society, therefore, considering how much the practice of Physic would be advantaged by procuring a Drug of so much consequence as Opium, in an unsophisticated state, have this Session, after due trials of some Opium prepared from Poppies grown in England, given FIFTY GUINEAS to Mr. JOHN BALL, of Williton, for the discovery of his Method of preparing it, and which, from the authority of several eminent Physicians who made trial of the Opium, and whose Letters are here inserted, it is hoped will prove an advantageous discovery.

SIR,

S I R,

BY the favour of my worthy friend Dr. Brockelsby, I have taken the liberty to send a small pot of Opium, which I have extracted this year from a few poppy heads in my garden, and request of you to present it to the Society, with my most respectful compliments: as I make no doubt it may be brought to the greatest perfection in this country, and rendered at one half the price at which we have it from the East, and without the least adulteration; and should be extremely obliged to you, if you would be so kind as to send a part of it to one or two of the principal hospitals for trial. I am of opinion a smaller quantity will answer, as I am informed that what we have from abroad is mixed with rice flour and other adulterations.

I am

Your most humble servant,

JOHN BALL.

Williton

Aug. 13, 1796.

Mr. MORE.

SIR,

S I R,

YOUR obliging letter of the 21st of November, respecting the sample of Opium I received, which should have answered, but was then confined with a severe fit of the gout: am exceedingly obliged for the trouble I have given, and beg leave to inform you, that my intention of sending the Opium to you was, first, in order to have a fair trial made, and, if approved, to make it known to the Society, for the good of the public at large; but at the same time must say, that I expect a pecuniary reward, particularly from such a respectable and opulent Society.

I think amazing quantities are consumed every year; and am of opinion, that there is twenty times more Opium used now in England only, than there was fifteen or twenty years since, as great quantities are used in outward applications, and it is continually advancing in price, which con-

vinces me of the great demand for it. As you say in yours, that you would wish to know what reward I expect for making it public to the Society, I should think not less than fifty guineas, being assured of its answering every good purpose; and make no doubt but we shall have Opium Contractors in the West, and full as able to export, or even better than the Turks, being the makers as well as the exporters; the Turks being only the latter, having their Opium from the East.

I am, SIR,

Your most humble servant,

JOHN BALL.

Williton,
December 14, 1794.

Mr. MORE.

S I R,

I HAVE this post received yours respecting the Opium, and beg leave to acquaint the Society, that what I meant in my former letter, by the term half-price,

was generally for one half less than what we give the druggist in London. I have been offered, and have partly agreed with a druggist in town, for all the Opium I shall make this year, at the same price which Opium from the East shall be at that time; and I make no doubt but, when it is publicly known, that in the course of a very few years we shall be able to render it from five to eight shillings per pound, without the least adulteration; and I am likewise of opinion, that the most barren ground, which in some places lets from two to ten shillings an acre, will, with very little expence, answer for the growth of Poppies. I shall take care this summer to find out, if any one particular sort or colour produces the most Opium.

I am, SIR,

Your obedient humble servant,

JOHN BALL.

*Williton,
April 27, 1795.*

Mr. MORE.

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SIR,

S I R,

HAVE this post received yours respecting the resolution of the Society to give me fifty guineas for the discovery of the process for obtaining Opium from Poppies grown in Great-Britain; and, as you wish for an immediate answer, must beg that you will present my most respectful compliments, and that I agree to accept of the conditions stipulated in their resolutions; and, in the course of a week, I will communicate to the Society the whole process.

I am, SIR,

Your very humble servant,

JOHN BALL.

*Williton,**May 25, 1795.*

Mr. MORE.

MY LORDS AND GENTLEMEN,

BY your Secretary, Mr. More, I received your resolutions respecting your purchasing from me the mode of my preparing the

the sample of Opium which I took the liberty of sending to you for your particular inspection, and at the same time to beg the favour of your having a sufficient trial of its properties, which I find you have been so obliging as to have done; and likewise have granted to me the fifty guineas as a purchase of my method of preparing Opium; for which you have my sincere thanks; and I am exceedingly pleased to find, that it was thought worthy the notice of so honourable and respectable a Society; and am satisfied there can be no other mode of preparing or collecting the true and genuine Opium, than what follows.

Nothing can be more simple, or attended with less expence, than the making or extracting the pure and genuine Opium from the large Poppies, commonly called or known by the name of Garden Poppies; the seeds of which I would advise to be sown the latter end of February, and again about the second week in March, in beds three feet and an half wide, well prepared

with good rotten dung, and often turned or ploughed, in order to mix it well and have it fine, either in small drills, three in each bed, in the manner fallads are sown, and, when about two inches high, to thin them one foot apart; or otherwise, to sow them in beds in the broad-cast way, and thin them to the same distance (if the weather should prove wet at that time, those that are taken up may be transplanted; but I do not suppose the transplanted ones will answer, having but one spill-root, and will require frequent waterings): keep them free from weeds, they will grow well, and produce from four to ten heads, shewing large and different-coloured flowers, which, when the leaves die away and drop off, the pods then being in a green state, is the proper time for extracting the Opium, by making four or five small longitudinal incisions with a sharp-pointed knife, about one inch long, on one side only of the head or pod, just through the scarf-skin, taking care not to cut to the seeds: immediately on the incision being made, a milky fluid will

will issue out, which is the Opium, and, being of a glutinous nature or substance, will adhere to the bottom of the incision; but some are so luxuriant, that it will drop from the pod on the leaves underneath. The next day, if the weather should be fine, and a good deal of sun-shine, the Opium will be found a greyish substance, and some almost turning black: it is then to be scraped off the pods, and, if any, from the leaves, with the edge of a knife or an instrument for that purpose, into pans or pots; and in a day or two it will be of a proper consistence to make into a mass, and to be potted.

As soon as you have taken away all the Opium from one side of the pod, then make incisions on the opposite side, and proceed in the same manner. The reason of my not making the incisions all around at the first, is, that you cannot so conveniently take away the Opium; but every person, upon trial, will be the best judge. Children may with ease be soon taught to make the incisions,

and take off the Opium; so that the expence will be found exceedingly trifling.

The small white seeds in that state will be found very sweet and pleasant, and may be eat without the least danger; and it is the custom in the East to carry a plate of them to the table, after dinner, with other fruits.

I intend this year to keep apart a small quantity of Opium from each coloured Poppy, to find out if any one more than another produces the greatest quantity, or of the greatest strength; and shall save seeds of each, to sow separately the next spring.

I am of opinion, that numbers of inclosures taken from hills in a south aspect, with a very little expence, may be brought into a proper state for the growth of Poppies.

I should think that an instrument may be made of a concave form, with four or five pointed lances, about the twelfth or fourteenth part of an inch, to make the in-

cisions at once ; and likewise something of the rake-kind, so that the three drills which I have directed to be made in each bed, may be performed at the same time.

By a calculation which I have made, supposing one poppy, growing in one square foot of earth, and producing only one grain of Opium, more than fifty pounds will be collected from off one statute acre of land ; but, upon recollecting that one Poppy produces from three, four, to ten heads, and in each from six to ten incisions are made ; and I am positive, from many of them (I mean one incision), the last year, I took away two or three grains. What must then be the produce ? Opium is now twenty-two shillings the pound.

I am,

MY LORDS AND GENTLEMEN,

Your most obliged and most devoted
humble servant,

JOHN BALL.

*Williton,
June 2, 1795.*

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SIR,

S I R,

I HAVE this day sent you, by the coach from Bridgewater, the Opium which I promised you; and take this opportunity of informing you respecting the Poppies. If you recollect, I was fearful that the transplanted ones would not answer, and am now convinced, having a large quantity of Poppies which had sown themselves: when of a proper size, I transplanted about four thousand in beds, but not one single plant came to perfection; therefore, shall never transplant any more; and, not having saved any seeds the last year, owing to my not being at home at the proper time, I could not sow any. The bed where the Poppies had sown themselves was five hundred and seventy-six feet square, from which I collected about four ounces of Opium, notwithstanding the plants were very thick; and, to shew you the advantage of giving them sufficient room, from some few plants which were detached, I took from fifteen to thirty-four grains: these had sown themselves

selves on ground that had been well manured with rotten dung, which points out the utility of good cultivation: the semi-double, and those of a dark colour, produced the most Opium. The pods should be about the size of a walnut, before you make the incision: the dried poppy-heads which I had from the druggist in London, are full three times as big as what mine are, consequently must produce a much greater quantity of Opium.

I am, SIR,

Your most humble servant,

JOHN BALL.

*Williton,
August 22, 1795.*

MR. MORE.

SIR,

I RECEIVED the favour of your letter, dated the 10th instant, by which I find you have extracted some Opium from single Poppies; if you will please to advert to my
5 letter

letter of instructions for such purpose, I said I had collected my Opium from double or semi-double Poppies, which accidentally grew in my garden; by which I find the produce to be more than double what you collected from the single: as a proof, I will do myself the pleasure of sending you some Opium, which I have absolutely collected myself this year from one Poppy; I should suppose it more than thirty grains: twenty-eight heads grew on that Poppy: it was of the semi-double kind. I shall likewise send you some of the heads from which I extracted the Opium, being far preferable to the single, as appears from the produce of each.

I remain, SIR,

Your very humble servant,

JOHN BALL.

Williton,
September 12, 1795.

Mr. MORE.

SIR,

S I R,

I OUGHT indeed to apologize for my omission respecting the English Opium: I need not observe that, in its sensible properties, it does not seem inferior to any, and that it possesses the advantage of being perfectly clean, which the foreign Opium never is; a circumstance which must always affect it, when given in a crude state; for I am not quite satisfied that the ordinary method of dissolving in spirit, and evaporating the tincture, leaves the Opium in an improved state as a medicine. I have not had sufficient for the experiment; otherwise I would have dissolved large quantities of English and of Foreign Opium in spirit, for the purpose of procuring all the medicinal matter from each; and, if I am not much deceived, I think I should have found, that the purified extract of the foreign would not have been superior in efficacy to the English; that is, that if a grain, for instance, of each be dissolved and evaporated, the pure product of the grain of
the

the foreign will not be more efficacious than the pure product of the English grain.

I have made trial of one grain of it in a pill with soap upon myself, to allay a tickling cough which prevented sleep, and it effectually relieved me; and this I repeated the next evening, with the like success. I tried it also with a gentleman who had been in the regular habit of taking two grains of Opium every night, by secretly substituting an equal quantity of the English, and there was no observable difference in the effects; from which I concluded, that there is very little difference to be stated of their comparative efficacy, since, upon withdrawing only a quarter of a grain from the usual dose upon a former occasion, the night seemed to be less comfortable; but this might perhaps have been merely accidental. However, if, upon future trial, it should even be found inferior in efficacy in equal doses, yet when the dose becomes exactly ascertained, I think its natural purity will give it a decided preference over that which must be purified by art; and, in its effects,
I expect

I expect we shall find it more constant and more equal. I have the honour to be,

SIR,

Your obedient servant,

J. LATHAM.

*Bedford Row,
January 18, 1795.*

Mr. MORE,

S I R,

I N consequence of the request from the Society for the Encouragement of Arts, Manufactures, and Commerce, I have administered the English Opium; and it affords me much satisfaction to be able to report, that I have found the Opium to be equally powerful, and to produce the same effects as the best foreign preparation of this drug. If it be required by the Society, I will with much pleasure state to them a decisive case of the efficacy of the English Opium. I have the honour to be,

The Society's most obedient

and most humble servant,

GEORGE PEARSON.

*Leicester-Square,
March 9, 1795.*

SIR,

S I R,

I HAVE made trial of the English Opium, which you sent to me from the Society, in a variety of cases, and find it equal in point of strength to the best extract from foreign Opium, and far superior in flavour, which, in the extract, is much injured by the boiling: it is likewise free from those impurities which are so abundant in the crude foreign Opium.

I am, SIR,

Yours most respectfully,

GEORGE WILSON.

*Bedford-Street,
April 15, 1795.*

Mr. MORE.

PAPER